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Palliative



Care

Version 5.3

PLAB 1 Keys is for **PLAB-1** and **UKMLA-AKT** (Based on the New MLA Content-Map)

Corrected, Updated, Lighter

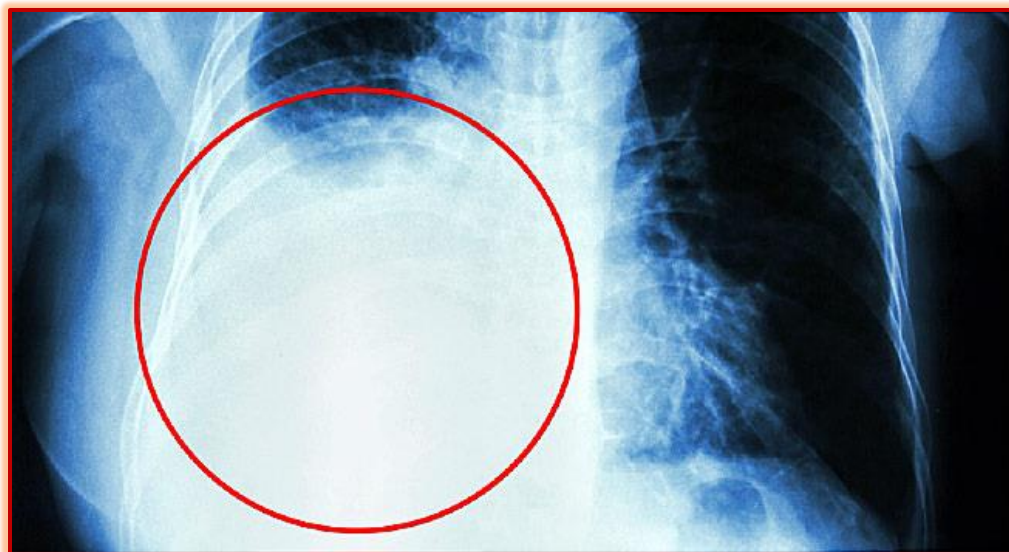
With the Most Recent Recalls and the UK Guidelines

ATTENTION: This file will be updated online on our website frequently!

(example: **Version 2.7** is more recent than **Version 2.6**, and so on)

Key 1	Pain ladder (Analgesia Ladder)
	<div>1) Simple analgesia → Paracetamol, NSAIDs, Aspirin.</div> <div>2) Weak opiates → Codeine, Tramadol, Dihydrocodeine.</div> <div>3) Strong opiates → Morphine, Fentanyl patches, Diamorphine, Oxycodone.</div>

Key 2	<p>If bowel obstruction occurs due to advanced malignancy or as a complication of chemotherapy, conservative treatment is not an option as in most cases it fails.</p> <p>So, → Palliative colostomy can help alleviate the symptoms.</p> <p>However, NGT can be used as an initial step to decompress the stomach especially if the obstruction has caused vomiting of fecal matters.</p>
Key 3	<p>A palliative care patient with End-stage lung cancer that metastasized to bone presents with worsening cough, SOB, pleuritic chest pain. X-Ray chest shows Pleural Effusion. What is the best management to relieve his symptoms?</p> <p>→ Pleural Aspiration.</p>



Pleural effusion

✓ Pleural aspiration the best single management for relieve of pleural effusion even if in palliative care patients (even if in their last hours).

✓ However, if the patient is extremely ill, stopped talking or drinking, cannot walk, or unconscious, he would not be fit for x-ray and pleural aspiration. In this case, we would consider morphine to help with his SOB. But in general, pleural aspiration is the management.

Key 4 ■ If an outpatient who is on **Oral Morphine** develops **Side Effects** (e.g. drowsiness, Nausea, Vomiting)

→ **Shift to Oral Oxycodone.** ✓

✓ Oxycodone is **double the potency** of the morphine but with **fewer side effects**.

	<p>✓ Remember, we should not go back on the pain ladder, we either go forwards, ↑ dose, replace to a stronger option or add-on. (No Backward on the ladder).</p>
Key 5	<p>■ The First-line Anti-emetic for nausea and vomiting 2ry to (increased intracranial pressure) is → Cyclizine.</p> <p>■ Example,</p> <p>A patient with glioblastoma presents with nausea and vomiting.</p> <p>→ Cyclizine</p> <p>✓ Glioblastoma (intracranial tumour) → (↑ ICP) → N., V.</p> <p>✓ Remember that (Dexamethasone) can also help relieve the increased intracranial pressure by shrinking the edema around the tumour and thus relieve the nausea and other symptoms.</p>
Key 6	<p>An end stage mandible cancer patient with bone metastasis presents with Hypercalcemia ($\text{Ca}^{++} > 2.6$)</p> <p>It is written on her records (do not resuscitate = DNR).</p>

What should be done?

DNR = **do not perform CPR** (Cardiopulmonary Resuscitation), not treatment!

So, **we shall treat this hypercalcemia**

1) Initial → **IV fluids** (+)

2) Then → **IV Bisphosphonate** (e.g. **IV Zoledronic acid** “**Zoledronate**” or **Alendronate**)

The question might mention some **features of hypercalcemia** such as:

- **Neuro** → **lethargy, Confusion, Depression.**
- **GIT** → **Constipation, Nausea, Vomiting**
- **Renal** → **polyuria** (increased urination), **Polydipsia** (Thirst).
- **CVS** → ECG: **Short QT interval.**

The stem may also mention that IV fluid (e.g. IV crystalloid) has been given, thus, **the next step would be**

	→ IV Bisphosphonate (IV Zoledronic acid).
Key 7	<p>If a patient is in a hospice for palliative care develops severe <u>bleeding</u> (eg, hematemesis), what should be done?</p> <p>→ Administer subcutaneous <u>Midazolam</u> and <u>Morphine</u>.</p> <p>✓ Patients in hospice for palliative care should be offered a (rest in peace) death. i.e., peaceful death. The aim is not to shorten or prolong their lives, but to try to provide a more comfortable last hours of life while dying.</p> <p>Massive bleeding in a palliative patient → Give SC midazolam and morphine</p> <p>These medications help manage pain and anxiety, ensuring the patient remains comfortable during severe episodes such as massive bleeding.</p> <p>This approach aligns with the principles of palliative care, aiming to provide a dignified and peaceful death for patients in their final stages of life.</p>
Key 8	<p>Very Important Collection</p> <p>♠ Bone pain due to bone metastasis → Radiotherapy. (1st line)</p> <p>If failed → Bisphosphonate + NSAIDs (eg, Naproxen) (2nd line)</p>

Need more pain control? → **Opioid (eg, morphine, oxycodone)**. Or vice versa.

• **Q1:** if the pain is acute and developed after radiotherapy, give

→ **Oral morphine sulphate**. **Imp v.**

• **Q2:** A man with bone metastasis is on paracetamol, and immediate and prolonged release oxycodone (opioid). There is still pain, what to add on?

→ **NSAIDs eg, Naproxen**. **Imp v.**

(All asked previously, be careful).

♠ **Neuropathic pain**

→ **Gabapentin**, **Amitriptyline**, **Pregabalin**, **Duloxetine**

Anyone could be the correct answer (**imp v**).

♠ **Trigeminal neuralgia** → **Carbamazepine** = (**Anticonvulsant**).

Key 9 Patient on Morphine develops side effects (e.g. drowsiness, nausea)

→ **Replace morphine by oxycodone**

*Fentanyl patches have a slow onset of action; therefore, they should be avoided in a patient who is **still in pain at the presentation time**.

Key 10 A patient who had undergone radical prostatectomy due to prostate cancer last year has now developed severe thigh pain that sometimes radiates to back. He is on morphine but still in pain.

→ **Radiotherapy** (bone metastasis).

✓ The gold standard for bone metastasis is (MRI), followed by (Bone Scintigraphy).

Remember:

The commonest Origins of Bone Metastasis

(commonly affects **Spine**, then pelvis, then ribs, then skull and long bones)

In Males ♂ → **PROSTATE** then Lung.

In Females ♀ → **BREAST** then Lung.

Key 11 In patient on oral morphine who are still in pain and need to take additional dose PRN (Breakthrough) to achieve pain relief:

We need to calculate **The Main Dose** + **The Breakthrough Dose**

☐ **The main dose:**

(**sum all amounts** of morphine that is already being received by a patient in 24 hours to achieve his relief) then (**divide it by 2** – so you can give it twice a day as a main dose).

☐ **The breakthrough dose** (= the additional dose).

Take **1/6** (the total daily dose given PRN 4 hourly)

(i.e. the **total main dose ÷ 6**)

Or

10% of the total daily dose given PRN 4 hourly

Example (1)

A patient with bone metastasis on oral morphine needs to take 60 mg twice a day + 20 mg each 4 hours to relieve her bone pain. What should be the new regimen for analgesia?

■ Let's first calculate the total dose in 24 hours

60 mg twice a day = 120

20 mg 4 hourly = 20 mg X 6 times a day = 120

So, the total dose is $120 + 120 = 240$

■ Now, for the new **Main dose**, divide the total by 2

The main dose $\rightarrow 240 \div 2 = (120 \text{ mg Twice a day})$

■ Now for the **breakthrough** (additional dose)

The total dose $\div 6 \rightarrow 240 \div 6 = 40 \text{ PRN 4 hourly}$

■ So, the answer $\rightarrow 120 \text{ mg twice a day} + 40 \text{ mg PRN 4 hourly}$

For the breakthrough dose, it is also valid to take 10% of the total dose (instead of 1/6)

10% of the 240 mg = 24 mg

→ **120 twice a day + 24 PRN** (possible also)

Note, PRN = Per need = As needed.

Example (2)

A female patient with multiple myeloma has severe back pain. She is on morphine 30 mg twice a day. She sometimes takes additional 3 to 4 doses to control her pain. The palliative team decided to raise her dose by third (1/3). What should be the new regimen.

◆ Her current total dose is 30 twice a day = $30 \times 2 = 60$ mg.

◆ The team will increase it by 1/3

So, the third of the 60 is 20.

So, the new main total dose will be $(60 + 20 = 80)$ mg).

80 mg to be taken twice a day → **40 mg twice a day.**

◆ Regarding the breakthrough (additional PRN dose)

1/6 of the total dose

1/6 of 80 = $(80 \div 6 = \text{around } 13)$

So, the breakthrough (additional dose) will be

13 mg 4 hourly (6 times a day as needed).

→ **40 mg twice a day + (10 to 15 mg up to 6 times a day as needed).**

Please note that the breakthrough dose is now commonly given as 10% of the total main dose instead of 1/6. So, if you find in the options 8 mg 6 times as needed, this could be a valid answer. (you won't find both)!

The breakthrough dose for this example is either one of the following:

■ **10% of the total dose** = $80 \div 10 = 8 \text{ mg}$ 4 hourly (6 times) as needed. Or:

▣ $1/6$ of the total dose = $80 \div 6 = 13 \text{ mg}$ (i.e. 10 to 15) 4 hourly (6 times) as needed

Example (3)

A patient with advanced cancer takes 10 mg Oramorph (oral solution of morphine sulphate 10mg/5ml) every 4 hours to control his pain. His GP decided to give him the same dose of morphine sulphate as a modified release tablet. What will be dose and frequency?

▣ Calculate the total dose per 24 hours:

10 mg every 4 hours

→ in 24 hours: he receives $10 \times 6 = 60 \text{ mg}$.

▣ Divide them by 2 to be given twice a day:

→ $60/2$

= **30 mg BD.**

Key 12 A patient with a terminal stage prostate cancer with bone metastasis in severe pain presents asking for a medication to end his life.

✓ **Refer to Hospice Care** (it is a place where palliative care is given to patients with terminal illnesses and help alleviate their pain and suffering while dying. It also involves a lot of other fields of support such as psychological, emotional and social).

✓ **Euthanasia** (a painless killing of a patient with a terminal disease) is a **CRIME** in the UK!

Key
13

Regarding death certificate

- In the **1a part** of the death certificate, write the “**Disease or condition directly leading to death**” **clearly** and **specifically**.

Examples

☐ Write → **Small cell carcinoma of the main right bronchus** instead of just “Lung cancer”.

☐ Write → **Inferior Myocardial Infarction**

Instead of “coronary thrombus/ Cardiac arrest/ Cardiovascular event/ Acute coronary syndrome...etc”

☐ Write → **Pneumonia of the left lower lobe of the left lung**

Instead of “~~lung infection/respiratory failure~~”

- **AVOID** vague terms and modes of dying such as (Respiratory distress/ Cardiac arrest/ Cardiovascular event/ Chest infections/ Cardiovascular event).

- Never use abbreviations!

- Write the date of death using (**Words**) NOT (Figures).

Example

▣ Write → the **Fourth day of July** (instead of 04/07).

Key 14 Remember, in the analgesia ladder, we can add-on another stronger or of the same potency level analgesics. However, we cannot go back on the ladder to a weaker analgesic.

Example,

A palliative patient in a hospice for end-of-life care due to terminal non-Hodgkin lymphoma. She has severe pain in the abdomen and chest. She is using Fentanyl patches but still in pain. What should be done?

→ **Keep Fentanyl patch but Add SC Morphine sulphate.**

✓ Both are step 3 on the pain relieve ladder.

✓ As the patient is dying, no need to remove the patch or replace it with morphine.

Key 15 **Regarding Codeine Phosphate (Step 2 on the ladder).**

✓ There is nothing called (Subcutaneous) Codeine. Thus, “subcutaneous codeine” will always be a wrong answer.

✓ Oral Codeine has very high rate of side effects (nausea, vomiting, constipation, confusion) and the young barely tolerate it. Therefore, in the elderly, do not give Codeine!

✓ **Oral Codeine, if led to side effects such as nausea, can be replaced by either:**

◆ **Buprenorphine patch** (Optimal! If given in the choices, pick it unless the patient is currently in pain, as it takes some time to work).

Or

◆ **Subcutaneous morphine.**

Example

A terminal bladder cancer patient has lower abdominal pain that is **well controlled** with Oral Codeine Phosphate. However, he is nauseous, and finds it difficult to keep taking oral medications as he is weak to swallow. What should be done?

■ Oral codeine can be replaced by either

✓ Buprenorphine patch (best option if given), or

✓ Subcutaneous Morphine.

■ Note that he cannot tolerate orally, thus any oral option is **WRONG!**

■ Also, Fentanyl patch is inappropriate as it is very potent compared to his current method of pain control. It will be an unnecessary exposure to more opioids (Overdose).

■ Finally, there is no Subcutaneous form of Codeine!

Key 16 A patient with liver metastasis has Right hypochondriac pain. He is on Paracetamol and Morphine sulphate. However, the pain intensity increases sometimes. What should be added to manage his pain?

✓ Liver pain is due to **stretching** of the liver **capsule** during enlargement (liver has no nerve fibres).

✓ **Capsular pain** responds well to → **NSAIDs (eg, Ibuprofen/ Naproxen).**

✓ **Note**, adding on Codeine is wrong. The patient is already on a stronger opioid (Morphine), we do not get back on the pain ladder.

So, the answer is → **Ibuprofen or Naproxen** (capsular pain responds well to NSAIDs).

Very Important:

- If the patient is already susceptible to thrombotic risk or **GI bleeding**, in case he uses NSAIDs (eg, if the patient is already on **Aspirin, Rivaroxaban**),
→ **DO NOT** give **NSAIDs** to control liver pain due to metastasis.
- Instead, give → **Dexamethasone** (It is also useful in relieving the sharp stabbing liver pain that results due to liver capsule stretched due to cancer).

Key 17 ✓ **Remember**, we should not go back on the pain ladder, we either go forwards, ↑ dose, replace to a stronger option or add-on. (No Backward on the ladder).

Example,

A prostate cancer with bone metastasis patient has very severe back pain that is no longer controlled by Codeine and Naproxen (NSAIDs). What should be done?

→ **Replace Codeine (step 2) with Oral Morphine (step 3)**

- ◆ Do not pick **dihydrocodeine** or **tramadol** (same step on the ladder), move up on the ladder!
- ◆ Also, do not pick (**Oxycodone**) as it might cause an opioid overdose (it is the double potency of morphine).
- ♠ We shall try Morphine first before oxycodone while climbing up the ladder.
- ♠ If morphine results in intolerable side effects such as nausea and vomiting, we might then try oxycodone as cleared previous (it has more potent and with less side effects).

Key 18 **Anticipatory Medications**

(**Every single word is important!**)

- ♠ These are “**just in case**” medications that are allowed to be given to a palliative patient during his/ her **last days in life** (ie, **end-of-life care**).
- ♠ They are typically given **SUBCUTANEOUSLY!** “Important”
- ♠ They are aimed at making the death more comfortable, and hence, they cover the following main possible complaints in a dying individual:

■ **Pain and Breathlessness** → **SC Morphine**.

■ **Nausea and Vomiting** (eg, end-stage bowel obstruction in palliative patient)

→ **SC Haloperidol** or **SC Cyclizine**.

▣ **Anxiety, Delirium, Agitation** → **SC Midazolam**.

▣ **Noisy/ Excessive Respiratory Secretions (Death Rattles)**

→ **SC Hyoscine Butylbromide** or **SC Glycopyrronium**.

Glycopyrronium and **hyoscine** are anticholinergic medications, typically given subcutaneously. They reduce the excessive respiratory secretions by blocking the action of acetylcholine and therefore reduce the discomfort and risk of aspiration.

Important Notes (Recently Asked):

- If a lung cancer patient is active, moving around, able to eat and drink, vitally stable in general (ie, **not in their last days of life**) and developed **wheezes** and **breathlessness** → Give **Nebulized Salbutamol (Bronchodilators)**, **NOT** SC Morphine even if the patient is having lung cancer and is under Palliative register.
- **SC Morphine** is the choice if the patient is dying, to help them die in peace. Eg, if the same lung cancer patient with end-stage cancer, has dyspnea and wheezes, **not** eating or drinking, **not** active, his vitals are **deteriorated**, go for **SC morphine** in such a case (**End-of-life care**).

Quick Scenarios:

- An elderly man with severe dementia has developed excessive respiratory secretions that cause noisy breathing, discomfort, rhonchi:
→ **Subcutaneous hyoscine or glycopyrronium.**
- An elderly man with advanced colorectal cancer is suspected to have bowel obstruction. He has nausea and vomiting. He refuses any kind of surgery or invasive procedures:
→ **Subcutaneous cyclizine or haloperidol.**
- An elderly man with advanced lung cancer who is unable to eat, drink, move freely. His vitals are deteriorating. He has dyspnea and wheezes:
→ **Subcutaneous morphine.**
- An elderly man with advanced lung cancer who is able to eat, drink, move freely. His vitals are within normal. He has dyspnea and wheezes:
→ **Nebulised salbutamol (bronchodilators).**

Key
19

♠ **Intractable Hiccup due to liver cancer** → **Metoclopramide**. Others: Domperidone, Nifedipine. *“Useful for peripheral hiccups”*

(Peripheral hiccup due to diaphragmatic irritation by liver metastasis “irritates phrenic nerve” → hiccup).

♠ If Metoclopramide, Domperidone, Nifedipine are not given within the options, pick

→ **Chlorpromazine**. *“useful for central hiccups e.g., brain tumor, or if liver cancer but metoclopramide, domperidone, or nifedipine are tried but failed or if they are not given in the options in case of liver cancer.”*

Key
20

Very Important: Anti-emetics for Nausea and Vomiting

▣ Anti-emetic in renal failure/ Hypercalcemia (metabolic cause) or Drug or Toxin induced vomiting

→ **Haloperidol**. (1st line)

▣ However, if there is associated **Parkinson's disease**, Haloperidol is contraindicated! Instead of Haloperidol, we use instead:

→ **Levomopromazine**. (2nd line).

If not in the options, pick → **Cyclizine**.

▣ Anti-emetic in case of ↑ ICP (e.g., intracerebral tumour) or vomiting due to bowel obstruction

→ **Cyclizine**.

■ Anti-emetic in case of “delayed gastric emptying e.g., peritoneal metastasis causing partial bowel obstruction”:

→ **Metoclopramide “a prokinetic”**.

(Never use Haloperidol with Parkinson’s)!

■ Anti-emetic due to Chemotherapy, Radiotherapy

→ **Ondansetron**. ✓

■ Anti-emetics in Hyperemesis gravidarum (after giving IV fluids):

✓ **1st line**: “**zine**” family e.g. **Cyclizine, Promethazine**

✓ **2nd line**: IV **Metoclopramide, Ondansetron**

✓ **3rd line**: Steroids

■ Vertigo (e.g., Meniere’s/ BPPV/ Vestibular neuritis)

→ **Buccal Prochlorperazine**.

Key 21	Regarding Valid Prescription
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■ The **quantity** of any controlled drug (e.g. Morphine) must strictly be written in both **Words** and **Figures**!

e.g.

Morphine 10 mg modified release capsules

Supply 62 (**sixty-two**) capsules

Take one capsule twice a day

If the words (**sixty-two**) are not written → the prescription will be legally rejected by a pharmacist!

So, the (**Quantity**) not the (strength) of the controlled-drug is what matters the most!

Others

✓ The doctor's (**signature**) must be **handwritten** but the prescription itself does not have to be handwritten.

	✓ The age and date of birth of patient are better written but not legally required unless if < 12 YO.
Key 22	<p>Liver cancer + Hiccups.</p> <p>Give → Metoclopramide</p>
Key 23	<p>A patient with gastric ulcer needs analgesics. He is on paracetamol and is allergic to diclofenac (NSAIDs). What should be given next?</p> <p>→ Tramadol. (2nd step on the analgesia ladder + Safe in Gastric ulcers).</p> <hr/> <div style="background-color: #002060; color: white; text-align: center; padding: 10px; margin: 10px 0;"> Pain ladder (Analgesia Ladder) </div> <p>Simple analgesia → Paracetamol, NSAIDs, Aspirin. Weak opiates → Codeine, Tramadol, Dihydrocodeine. Strong opiates → Morphine, Fentanyl patches, Diamorphine, Oxycodone</p>
Key 24	A patient with a terminal stage prostate cancer with bone metastasis in severe pain presents asking for a medication to end his life.

	<p>✓ Refer to Hospice Care (it is a place where palliative care is given to patients with terminal illnesses and help alleviate their pain and suffering while dying. It also involves a lot of other fields of support such as psychological, emotional and social).</p> <p>✓ Euthanasia (a painless killing of a patient with a terminal disease) is a CRIME in the UK!</p>
Key 25	<p>A patient who had undergone radical prostatectomy due to prostate cancer last year has now developed severe thigh pain that sometimes radiates to back. He is on morphine but still in pain.</p> <p>→ Radiotherapy (bone metastasis).</p> <p>✓ <i>The gold standard for bone metastasis is (MRI), followed by (Bone Scintigraphy).</i></p> <p>The commonest Origins of Bone Metastasis</p> <p>(commonly Spine, then pelvis, then ribs, then skull and long bones)</p> <p>In Males ♂ → PROSTATE then Lung.</p>

In Females ♀ → **BREAST** then Lung.

♠ **Bone pain due to metastasis** → Radiotherapy.

Others → NSAIDs, Opioids.

♠ **Neuropathic pain** → Gabapentin, Amitriptyline, Pregabalin, Duloxetine.

Key
26

▣ **An elderly with metastatic colorectal carcinoma presents with colicky abdominal pain, vomiting of fecal content. O/E, the abdomen is distended with high-pitched bowel sound.**

The most appropriate management to relieve his symptoms

→ **NGT “Nasogastric tube”**.

NGT is used in palliative patients if:

✓ vomiting of fecal contents, or:

✓ Persistent vomiting that does not respond to anti-emetics (e.g. cyclizine).

Key
27

■ **An elderly female with end-stage breast cancer admitted 5 days ago for abdominal pain. She has not opened her bowel nor eaten anything for the last few days. She cannot take her oral medication as she finds it difficult to swallow. She lacks capacity. Her daughter is concerned about her mother's oral intake.**

The appropriate action → **encourage small sips of water and mouth care.**

This patient is dying. The palliative care objection here is to ensure a peaceful and comfortable death. Mouth care and being moisture is what matters here as she is already in her last days.

Key
28

■ **Noisy Respiratory Secretions and gurgling sounds in a late cancer patient**

→ **Subcutaneous Hyoscine Butylbromide.** Or **Glycopyrronium** (Not orally!)

They are **antimuscarinic.**

Another correct answer → **Glycopyrronium Bromide Subcutaneously.**

Another correct answer → **Antimuscarinic = Anticholinergic.**

Key 29	<p>■ A cancer patient on paracetamol and codeine. However, his pain is still uncontrolled. What to do?</p> <p>→ Shift to morphine</p> <p>We never go back in the pain ladder.</p>
Key 30	<p>A Colorectal cancer patient is visited at home by palliative care team. He takes codeine to manage his abdominal pain. However, he does not want oral medications as he finds it difficult to swallow. He has not taken codeine for the last 2 days and thus he is in pain now. What should be given instead?</p> <p>→ Subcutaneous Morphine.</p> <p>■ SC is preferred over IV in Palliative Care patients.</p> <p>■ Do not give patches (e.g. Buprenorphine patch) if the patient is currently in pain as these patches need some time to start working.</p>
Key 31	<p>60-year-old man with metastasized bladder cancer on SR morphine.</p>

Pain is not controlled and thus the dose was increased. He also Had to increase oral morphine too. However, the pain is still not controlled.

- A. Add NSAID
- B. change to SC morphine
- C. change to hydromorphone
- D. fentanyl patch
- E. **Change morphine to oxycodone**

✓ Oxycodone is **double the potency** of the morphine but with **fewer side effects**.

✓ **Remember**, we should **not** go back on the pain ladder, we either go forwards, ↑ dose, replace to a stronger option or add-on. (No Backward on the ladder).

✓ Fentanyl patches have a slow onset of action; therefore, they should be avoided in a patient who is **still in pain**.

Key 32	A 52-year-old female with metastatic breast cancer to the lungs with dry cough. Cough not responsive to linctus. Responded minimally to codeine for 7 days. What is the most appropriate management?
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	<p>A Nebulized normal saline</p> <p>B Nebulized local anaesthetic agent</p> <p>C Oral Morphine</p> <p>D Oral antibiotics</p> <p>E Oral steroids</p> <p>✓ As the cough has responded “minimally” to codeine which is a “weak opiate”, it is likely to respond better to a strong opiate “oral morphine”.</p> <p>✓ Morphine inhibits the central cough reflex.</p>
Key 33	<p>An elderly woman with breast Ca and <u>cerebral metastasis</u> presents to A and E Complaining of headache and intractable vomiting. Most appropriate medication to prescribe?</p> <p>A. Dexamethasone</p> <p>B. Haloperidol</p> <p>C. Metoclopramide</p> <p>D. Promethazine</p>

♦ In **intracranial tumour**

→ Give **high dose dexamethasone** “initially” to shrink the mass and edema and therefore alleviate the headache and the other symptoms.

♦ Note, if **GCS is ≤ 8** , we give “**Mannitol**” as it has a very rapid action. Otherwise, we start with corticosteroids (high dose dexamethasone is preferred).

♦ In Intracranial Hemorrhage with **Very Low GCS** and Neurological deficit (e.g. **Unequal Pupils**)

→ **Urgent Craniotomy**

Key 34 An old man with metastasis from Cancer Bronchus. Investigations: hypercalcemia, others normal. What's the appropriate initial treatment?

a) **0.9% NaCl “Normal Saline”**

b) Bisphosphonates

c) Calcitonin

d) Dexamethasone

The initial step to correct hypercalcemia → IV Normal Saline.

	The next step would be Bisphosphonate.
Key 35	<p>A 68-year-old man with upper abdominal pain. Has colon cancer which has metastasized to the liver. He refuses morphine because of previous bowel obstruction and constipation. Paracetamol has minimal effect on pain. Liver enzymes are deranged. What pain relief should be prescribed?</p> <p>a) Naproxen</p> <p>b) Codeine</p> <p>Amitriptyline</p> <p>d) Gabapentin</p> <p>Liver metastasis → Capsular pain (Responds well to NSAIDs such as Ibuprofen and Naproxen).</p> <p>♠ Capsular pain (liver) → NSAIDs (e.g. Ibuprofen/ Naproxen).</p>
Key 36	A question about Hiccups due to Liver metastasis. Most appropriate management?

A. **Metoclopramide**

B. Haloperidol

♠ **Intractable hiccup due to liver metastasis → Metoclopramide**

Key 37 Patient with advanced ovarian carcinoma with gaseous distension and intermittent pain. The most DEFINITIVE Rx?

A. Hyoscine Butylbromide

B. SC morphine

C. **Palliative stoma**

D. NG tube

If bowel obstruction occurs due to advanced malignancy or as a complication of chemotherapy, conservative treatment is not an option as in most cases it fails. So, the answer for this question is C. Palliative colostomy.

However, if the patient is vomiting **fecal contents**, to relieve the symptoms, initially insert **NGT**.

Key 38 An immunocompromised elderly patient with previous history of PE and MI. Taking Medications for COPD for 10 years. Complained of breathlessness and Coughing. Pneumonia is diagnosed and died after few hours. X-ray showed Multiple patchy Opacities. What will be filled in the 1a part of the death certificate?

- A. COPD
- B. **Pneumonia**
- C. Lung Failure
- D. Chest Infections.

Regarding death certificate

- In the **1a part** of the death certificate, write the “**Disease or condition directly leading to death**” **clearly** and **specifically**.

Examples

☐ Write → **Small cell carcinoma of the main right bronchus** instead of just “Lung cancer”.

☐ Write → **Inferior Myocardial Infarction**

	<p>Instead of “coronary thrombus/ Cardiac arrest/ Cardiovascular event/ Acute coronary syndrome...etc”</p> <p>☐ Write → Pneumonia of the left lower lobe</p> <p>Instead of “lung infection/ respiratory failure”</p> <ul style="list-style-type: none"> • AVOID vague terms and modes of dying such as (Respiratory distress/ Cardiac arrest/ Cardiovascular event/ Chest infections/ Cardiovascular event).
Key 39	<p>For the bed-ridden very elderly patients who still have mental capacity, if they develop a disease (e.g. Pneumonia), we need to:</p> <p>→ Discuss their wishes on the management plan, whether they prefer to be treated <u>at home</u> or <u>in hospital</u>.</p>
Key 40	<p>An elderly woman with metastatic breast cancer being under the palliative care team. She needs 60 mg oral morphine twice a day to control her pain. However, she now has difficulty in swallowing and thus will be shifted to subcutaneous morphine. What should be the dose?</p>

→ **60 mg subcutaneous morphine over 24 hours.**

■ From [Oral morphine to Subcutaneous morphine] → ($\div 2$)

■ From [Oral morphine to Subcutaneous diamorphine] → ($\div 3$)

■ From [Oral tramadol to IV morphine] → ($\div 20$)

✓ Remember, palliative patients are preferred to receive Subcutaneous medications rather than IV or IM.

✓ She takes 60 mg oral morphine twice a day (i.e. 120 mg over 24 hours).

✓ To shift to SC morphine, divide the 24-hour dose by 2 and give it over 24 hours.

✓ This means $120/2 = 60$ mg over 24 hours.

Key 41 ■ Anti-emetic in case of ↑ ICP (e.g. intracerebral tumour) or vomiting due to bowel obstruction
→ **Cyclizine.**

	<p>■ Anti-emetic in case of “delayed gastric emptying” e.g. peritoneal metastasis causing partial bowel obstruction:</p> <p>→ Metoclopramide “a prokinetic”. Also: domperidone.</p>
Key 42	<p>An old patient with a terminal stage cancer cannot sleep because of anxiety. What to give?</p> <p>→ Benzodiazepines (e.g. Lorazepam).</p> <ul style="list-style-type: none"> • Benzodiazepine can cause addiction; however, this is not a concern in this late stage cancer. • An added benefit of lorazepam here is that it can be given sublingually in case he develops difficulty in swallowing due to weakness.
Key 43	<p>Catastrophic bleeding in palliative care (at end of life care):</p> <p>→ administer 10 mg SC midazolam “for anxiety” and 10 mg SC morphine sulphate “for pain if required”.</p> <p><i>Remember, the palliative care primary goal is not to prolong life neither to shorten it, but to ensure the patient is comfortable during his last days.</i></p>
Key 44	<p>Breathlessness (dyspnea) in palliative patients who can tolerate orally can be dealt with by giving the patient opioids e.g., → Oral morphine. ✓</p>

✓ Be careful, nebulized salbutamol would be appropriate if there is additional wheeze and the dyspnea is thought to be due to partial airway obstruction from the tumour.

✓ So, in palliative patients who have (eg, terminal stage lung cancer, chronic heart failure) and present with breathlessness, consider low doses of **oral morphine** as it will decrease the perception of breathlessness without causing significant respiratory distress.

Key
45

■ In palliative patients with bowel obstruction (e.g., nausea, vomiting, constipation, abdominal pain)

Give → **Subcutaneous hyoscine butylbromide (Antimuscarinic).**

■ The most DEFINITIVE Rx

→ **Palliative stoma**

■ If the patient is vomiting fecal content, initially

→ **NGT** to relieve symptoms

“All asked previously”

Key
46

Legal prescription requirements

■ For Prescription only medicine (POM):

- ✓ Patient's name and address. "asked recently".
- ✓ Patient's age and date of birth "only required for children < 12 YO".
- ✓ Date.
- ✓ Prescriber's address.
- ✓ For handwritten "paper" prescription e.g., handwritten FP10 form
→ Prescriber's handwritten signature. "asked recently".
- ✓ For electronic signature → Prescriber's electronic signature.

■ For most controlled drugs e.g., diamorphine hydrochloride (heroin), oxycodone hydrochloride, gabapentin, midazolam:

- ✓ All the above-mentioned requirements +
- ✓ Prescriber's address "must be within the UK".
- ✓ Dose (e.g., 20 mg twice a day).
- ✓ Form (e.g., tablets, capsules, injections).
- ✓ Strength.
- ✓ Quantity in both words and figures (e.g., 10 (ten) mg).

•• **Important note:** *recently asked*

Oramorph (oral morphine sulphate 10mg/5ml) classed as scheduled 5 controlled drugs. Thus, quantity in both words and figures is **NOT** a requirement!

In other words, Schedule 5 controlled drugs such as Oramorph → no need for the quantity to be written in both figures and words.

Key
47

■ **Noisy Respiratory Secretions and gurgling sounds in a palliative patient:**

→ **Subcutaneous Hyoscine Butylbromide**. (Not orally!)

It is an **antimuscarinic**.

Another correct answer → **Glycopyrronium Bromide Subcutaneously**.

Another correct answer → **Antimuscarinic = Anticholinergic**. Recently asked.

<p>Key 48</p>	<p>♠ Bone pain due to bone metastasis → Radiotherapy. (1st line)</p> <p>If failed → Bisphosphonate + NSAIDs (eg, Naproxen) (2nd line)</p> <p>Need more pain control? → Opioid (eg, morphine, oxycodone). Or vice versa.</p> <ul style="list-style-type: none"> • Q1: if the pain is <u>acute</u> and developed <u>after radiotherapy</u>, give → Oral morphine sulphate. Imp v. • Q2: A man with bone metastasis is on paracetamol, and immediate and prolonged release oxycodone (opioid). There is still pain, what to add on? → NSAIDs eg, Naproxen. Imp v.
<p>Key 49</p>	<p>♠ Intractable Hiccup due to liver cancer → Metoclopramide. Others: Domperidone, Nifedipine. <i>“useful for peripheral hiccups”</i></p> <p>(Peripheral hiccup due to diaphragmatic irritation by liver metastasis “irritates phrenic nerve” → hiccup).</p> <p>♠ If Metoclopramide, Domperidone, Nifedipine are not given within the options, pick</p>

	<p>→ Chlorpromazine. <i>“useful for central hiccups e.g., brain tumor, or if liver cancer but metoclopramide, domperidone, or nifedipine are tried but failed or if they are not given in the options in case of liver cancer.”</i></p>
Key 50	<p>A patient with Hx of bronchogenic cancer developed low-grade fever and halitosis (bad mouth breath). His CT scan shows large right upper lobe cavitory lesion. The most appropriate management?</p> <p>→ Antibiotics.</p> <p>Fever + Cavity in lung on top of cancer</p> <p>→ suspect cavitation lung cancer ± necrosis and bacterial <u>infection</u></p> <p>→ antibiotics would benefit this patient.</p> <p><i>(This halitosis is not due to oral lesion where oral mouth wash would benefit him, it is due to a systemic lesion, which is the cavitory lesion and infection).</i></p>
Key 51	<p>A 50 YO man with non-Hodgkin’s lymphoma with bone metastasis is admitted to the hospice complaining of a week of:</p> <p>Uncontrolled abdominal and back pain, Nausea, vomiting and constipation.</p> <p>He is on the maximum doses of codeine phosphate.</p>

What is the single most appropriate action?

- A) Start a buprenorphine patch and stop codeine phosphate.
- B) Start subcutaneous haloperidol once a day.
- C) Start subcutaneous cyclizine.
- D) Start intravenous morphine sulphate and stop codeine phosphate.
- E) Start subcutaneous morphine sulphate in a syringe driver and stop codeine phosphate.

Answer:

- **Option (A) is wrong:** buprenorphine patch needs 2-3 days in order to start becoming effective and control the pain. Thus, it is not suitable because the patient is already in pain “not stable”.
- **Option (B) and (C) are wrong:** haloperidol and cyclizine may stop the vomiting. However, they would not control and relieve the pain. Also, note that his complaints of nausea, vomiting and constipation are mostly because he is on codeine phosphate “side effects” and when we stop it, these symptoms might disappear.
- **Option (D) is wrong:** IV drugs are not favoured in palliative patients.

- **Option E is right:** SC morphine can control the pain and even if the patient needs a higher dose, it is easy to increase the dose as the onset of action is rapid “around an hour”. SC is preferred over IV in palliative patients.

Note that oral morphine sulphate modified release can also be used as long as the patient tolerates orally and not vomiting. If no, we can change it to SC morphine. However, this is not among the options.

Key
52

A 64 yr old man with multiple myeloma presenting with agitation and confusion. He forgets his daughter's name. Serum calcium: 3.4 (Normal 2.1-2.6). He was given IV 0.9% saline infusion; however, his calcium is still high. What is the next most appropriate management?

→ **IV pamidronate.**

- Remember, **hypercalcemia** can cause agitation and confusion.

Other important features: polyuria, polydipsia, low moods, confusion...etc).

- The **initial** management of hypercalcemia → **IV fluids normal saline.**
- **Then** → **Bisphosphonates** (e.g., **alendronate**, **pamidronate IV infusion**).

*“**Note:** this is a palliative care patient who is having agitation. He could benefit from SC midazolam. However, the reason for his agitation here is known and treatable. Thus, we treat the root. Nonetheless, in general, SC midazolam is useful to relieve the agitation and restlessness in palliative care patients in general if there is no apparent and correctable cause of their agitation”.*

Key 53 Agitation and restlessness in a palliative patient

→ **Give Subcutaneous Midazolam.**

Haloperidol is another useful option. It should also be given subcutaneously in palliative care patients. So, if haloperidol orally or IV is in the options, it is wrong.

Key 54 Artificial Nutrition

First: Enteral Feeding (NGT VS PEG)

NGT = Nasogastric tube

PEG = Percutaneous Endoscopic Gastrostomy.

☐ Short-Term feeding

→ **NGT “Nasogastric Tube”.**

- Usually used first, unless if long-term feeding is required (see below).

- **Example:** a few days after stroke ([recent stroke](#)), and the patient has started to get swallowing difficulties. We start with NGT feeding [as his swallowing might improve with time](#). So, we feed him via NGT slowly and refer him to SALT (Speech and Language Therapist) who will assess and encourage his swallowing. If no improvement after a few weeks → PEG.

📌 Long-Term feeding

→ **PEG** “Percutaneous Endoscopic Gastrostomy feeding tube”.

- It is surgery to insert a flexible tube through the abdomen into the stomach. Thus, the patient has to be fit for sedation and surgery.
- **Example (1):** A patient with an [old stroke](#) (months) and no [improvement of dysphagia or swallowing](#), and he [becomes thin \(losing weight\)](#). This patient needs a long-term feeding method (PEG).
- **Example (2):** A patient with [motor neuron disease \(MND\)](#) with “[progressive](#)” difficulty of swallowing. We know that MND is a [chronic degenerative](#) progressive disease. So, we do not expect improvement, but deterioration. Therefore, a long-term feeding would be required (i.e., PEG).

The examples are important and were asked in previous exams

Important Medical Ethics Points:

✓ The **next of kin** (e.g., wife, brother, parents) do **not** have the legal authority to decide even if the patient lacks mental capacity.

✓ If the patient who is now lacking mental capacity has an **advance directive** that states that he does not want to receive a specific intervention such as artificial feeding, doctors **should follow** his advance directive.

☐ Advance Directive = a living will

A legal document in which a patient writes the treatments/ the procedures that he/she does not want to receive if they become unable to make decisions.

Second: Total Parenteral Nutrition (TPN)

Example:

A patient is booked for total gastrectomy due to non-metastatic gastric cancer. He is in hospital as his surgery will be done in a few days. He vomits every single meal and cannot tolerate feeding due to gastric cancer (outlet-block). He is malnourished and has lost 18 Kg in the last month. What is the most appropriate feeding method before the surgery?

• The best **pre-operative** feeding for him

→ **Total parenteral nutrition (TPN)** "A temporary method until surgery".

NGT and PEG deliver nutrition to his stomach. Thus, they are not suitable as he has gastric outlet obstruction. Any nutrition directed to his stomach would not pass down to small intestine.

	<ul style="list-style-type: none"> • The post-operative method for him would be → Jejunostomy feeding tube (J-tube). <p>This is a plastic tube that would be inserted (during the gastrectomy surgery) through the skin of the abdomen into the jejunum so that that patient would be able to have enteral feeding after surgery.</p> <p>He would not have a stomach and thus he would need a feeding tube directly to his small intestine (jejunum).</p>
Key 55	<p>After PEG is inserted, one-off leaks may occur.</p> <p>As long as there are <u>no signs of infection</u></p> <p>→ Reassure and continue enteral feeding.</p> <p>The stoma will most likely shrink in a few days, and fit well around the tube.</p>
Key 56	<p>Collection of important points in case of advanced colon cancer that causes bowel obstruction: “All were asked previously”</p> <p>■ Anti-emetic in nausea and vomiting due to bowel obstruction</p> <p>→ Cyclizine.</p> <p>(Note: neither senna nor phosphate enema are helpful in a palliative patient with bowel obstruction, they won't relieve the obstruction or the constipation. Thus, symptomatic relief of vomiting and nausea by giving cyclizine is appropriate).</p> <p>■ Anti-emetic in nausea and vomiting due to bowel obstruction due to end-stage colorectal cancer + Hx of Parkinson's disease + Cyclizine has failed</p>

→ **SUBCUTANEOUS Levomepromazine.**

■ In palliative patients with bowel obstruction (e.g., nausea, vomiting, constipation, abdominal pain)

→ **Subcutaneous hyoscine butylbromide (Antimuscarinic)** is also appropriate.

■ The most DEFINITIVE Rx

→ **Palliative stoma (palliative colostomy).**

■ If the patient is vomiting fecal content, initially

→ **Nasogastric tube (NGT) to relieve symptoms**

Key 57 An old patient is in hospice for renal cell carcinoma with abdominal wall metastasis. He is on 200 mg slow-release morphine (twice a day) + immediate-release morphine (every 4 hrs). However, he is still in pain. What to do?

→ **Replace slow-release morphine by SC morphine in a syringe driver.**

Key 58 **Management of Bone Pain due to Bone Metastasis**

1] **Radiotherapy** (1st line).

2] If failed → 2nd-line → **Bisphosphonate + NSAIDs (eg, Naproxen).**

3] Still pain? → add on **Opioids (eg, morphine, oxycodone or alfentanil)**.

Note: if the patient is already on step 2 and needs more pain control, go for step 3. If he has jumped to step 3 (opioids) and still needs more pain control, add on the step 2 (NSAIDs eg, Naproxen).

Note: ✓ If he is **already on opioids**, we cannot add another opioid eg, alfentanil, morphine, oxycodone. (But, we can change between them).

✓ Instead, pick another line of managing bone pain due to bone metastasis → Radiotherapy, NSAIDs, Bisphosphonate.

Note: **Gabapentin, amitriptyline** and **pregabalin** are used to manage **neuropathic pain** and are not useful for bone pain due to metastasis.

Key 59 An elderly man with terminal prostate cancer is brought by her carer to the emergency department as he recently became more confused than usual. He is on end-of-life care and has no relatives or advance directive. His carer says that the patient fell and hit his head 2 days ago. CT scan of the head shows intracranial hemorrhage. His GCS score is 8. He looks cachexic. He is agitated and is moaning in pain. What is the most appropriate management?

→ Administer subcutaneous **Midazolam**.

- He is receiving **end of life care**. Mannitol, Intubation or burr hole surgery may prolong her life for a few days.

However, **the primary goal of end-of-life care is to provide dignified and peaceful death** (eg, **by relieving any pain, agitation and anxiety**).

→ **Administer 10 mg SC midazolam (for anxiety and agitation) +**

	<p>10 mg SC morphine sulphate (for pain if required).</p> <ul style="list-style-type: none"> Remember, the palliative care primary goal is not to prolong life neither to shorten it, but to ensure the patient is comfortable during his last days.
Key 60	<ul style="list-style-type: none"> Palliative team should not try to prolong their palliative patients' lives as this would prolong their suffering. Also, they should not try to shorten their lives or lead to their death (Euthanasia is prohibited and illegal in the UK). The aim of palliative care register is to make patients comfortable at the last hours of their lives. Example <p>An elderly man with lung cancer and metastasis who is bed-bound and unable to do his daily activities had fallen on his head and developed intracranial hemorrhage.</p> <p>→ Give anxiety treatment (sedation) eg, → Midazolam.</p> <p>(Midazolam can be given subcutaneously).</p>
Key 61	<p>■ In lung cancer patients:</p> <p>→ lung cavitations → necrosis → colonisation of anaerobic bacteria → foul-gases → bad mouth breath (halitosis).</p> <p>■ In palliative care patients with lung cancer, the treatment of <u>halitosis</u> is:</p> <ul style="list-style-type: none"> Antibiotics (eg, metronidazole to reduce the anaerobic bacteria). Antiseptic mouthwash (to kill anaerobic bacteria).

■ **In short: Rx of halitosis in these cases?**

→ Treat the underlying source (eg, use antibiotics).

If not given in the options, pick → antiseptic mouthwash.

Key 62 End-stage colorectal cancer
+ Partial bowel obstruction
(Nausea, Vomiting, Abdominal distension and pain)
Subcutaneous Cyclizine has FAILED to relieve symptoms
Has Parkinson's disease

→ **Subcutaneous levomepromazine.**

(**Subcutaneous** route is preferred in palliative patients

+ **Levomepromazine** is good for **Parkinson's** patients with vomiting).

Key 63 • When **liver is enlarged** (eg, due to tumor, or metastasis), **painful right upper abdomen** may occur.

• This pain is not in the liver itself as the liver does not have any nerve fibres that sense pain. The pain is in the **capsule** that surrounds liver.

Remember:

- **For liver pain** (right upper abdominal pain) eg, liver metastasis:
→ **NSAIDs eg, Naproxen, Ibuprofen.**

Example: A palliative patient with a Hx of colorectal cancer is on paracetamol and immediate and modified release oxycodone. He presents with right upper abdominal pain and elevated liver enzymes. What to add on for pain?

→ **Naproxen (ie, NSAIDs).** This is most likely **liver metastasis.**

Key
64

Scenarios on Pain Management in Palliative Patient

Scenario (1)

A 70-year-old palliative patient with end-stage renal carcinoma can no longer tolerate taking his prolonged-release morphine orally as he feels too weak to swallow. He is now having increasing back pain. His laboratory results show:

Low serum albumin: 14 g/L (35-50)

Slightly elevated serum urea and creatinine.

eGFR 20 (>90).

What is the most appropriate medication (in a syringe driver) of the following to switch his oral morphine tablets to?

A) Oral morphine sulphate liquid.

- B) Oral codeine.
- C) Subcutaneous paracetamol.
- D) Subcutaneous non-steroidal anti-inflammatory drugs.
- E) Subcutaneous alfentanil.

Answer → (E) Subcutaneous alfentanil.

- Since he cannot tolerate orally, both options A and B are wrong. Also, the preferred route for palliative patients is **subcutaneous**.
- Paracetamol and NSAIDs could be too weak to manage his pain at this point.
- **More importantly**, when **eGFR is low (<60)**, it is more appropriate to use **opioids** such as oxycodone, morphine, alfentanil.

→ The best answer here is → **(E) Subcutaneous alfentanil** (which is an opioid).

Scenario (2)

A 71-year-old palliative patient with advanced prostate cancer can no longer get benefit of morphine as his significant pain is fluctuating in intensity, which requires more flexible dosing. His eGFR is 20 (>90).

What is the most appropriate medication of the following to switch his morphine to?

- A) Oral oxycodone.
- B) Alfentanil patch.
- C) Fentanyl patch.
- D) Subcutaneous diamorphine.
- E) Subcutaneous alfentanil.

Answer → **(E) Subcutaneous alfentanil.**

✓ The best medication for **fluctuating** pain is → **subcutaneous alfentanil**. This is because of its rapid onset and short duration of action, which suits the patient's fluctuating levels of pain.

✓ In addition, it is a safer option in patients with **renal impairment** (as in this patient). This is because it is metabolised in the liver.

✓ **What about alfentanil patch?** → There is no patch form for alfentanil. Also, patches in general are not suitable for fluctuating pain as they release medication steadily, which makes it less flexible for managing fluctuating pain.

Key 65 **The Management of Hypercalcemia [in General] Includes:**

- **First** line → **Rehydration (IV fluids)**. [In palliative patients: **SC fluids**].
- **Second** line → **Bisphosphonates** (eg, **alendronate, zoledronate, pamidronate**).

However:

In **palliative patients** with end-stage metastasised cancer who are **bed-bound**, have **POOR quality of life**, and **require FULL support** with their daily activities, it could be better to have **NO FURTHER TREATMENT** other than SC fluids if they develop hypercalcemia (eg, prostate cancer metastasised to bone).

✓ Patients in hospice for palliative care should be offered a (rest in peace) death. i.e., peaceful death. The aim is **not** to shorten or prolong their lives, but to try to provide a more comfortable last hours of life while dying.

Key
66

Important Note (Recently Asked):

- If a lung cancer patient is active, moving around, able to eat and drink, vitally stable in general (ie, **not their last days of life**) and developed **wheezes** and **breathlessness** → Give **Nebulized Salbutamol (Bronchodilators)**, **NOT** SC Morphine even if the patient is having lung cancer and is under Palliative register.
- **SC Morphine** is the choice if the patient is dying, to help them die in peace. Eg, if the same lung cancer patient with end-stage cancer, has dyspnea and wheezes, **not** eating or drinking, **not** active, his vitals are **deteriorated**, go for SC morphine in such a case (**End-of-life care**).

Key
67

Managing Liver Pain due to Liver Metastasis/Cancer

✓ Liver capsule pain results when the cancer stretches the tissues surrounding the liver. So, the pain is due to capsule being stretched → Sharp stabbing right upper quadrant pain. (Note: liver itself has no nerve fibres).

✓ Liver capsular pain responds well to → **NSAIDs (eg, Ibuprofen/ Naproxen)**.

Very Important:

- If the patient is already susceptible to thrombotic risk or **GI bleeding**, in case he uses NSAIDs (eg, if the patient is already on **Aspirin, Rivaroxaban**),

→ **DO NOT** give **NSAIDs** to control liver pain due to metastasis.

- Instead, give → **Dexamethasone** (It is also useful in relieving the sharp stabbing liver pain that results due to liver capsule stretched due to cancer).

So, be aware that both **NSAIDs** and **Dexamethasone** are helpful in relieving liver capsule pain in patients with liver cancer/metastasis.

Pick Dexamethasone if the patient is at a risk of GI bleeding, as NSAIDs is contraindicated. Otherwise, go for NSAIDs (eg, Naproxen/Ibuprofen).

Key
68

Important Anti-emetics in Parkinson's Patients

- **Cyclizine**. (It can also be given SC if severely ill patient).
- **Levomopromazine**. (It can also be given subcutaneously. This antiemetic is useful particularly if the cause of vomiting is metabolic).

Other useful antiemetics in Parkinson → Domperidone (oral only), Ondansetron.

✓ In Parkinson's disease, **avoid** → **Haloperidol** + **May Cause Parkinson's** (ie, **Metoclopramide, Cinnarizine, Prochlorperazine**).

These medications block D2 (dopamine) receptors. Thus, contraindicated.

Key 69	
	To convert from oral morphine to injectable morphine

→ Calculate the total oral morphine dose in 24 hours.

→ Then divide it by 2.

(Oral morphine has half the potency of injectable morphine).

Example:

If a patient is on 60 mg oral morphine twice a day and wants subcutaneous morphine:

60 mg twice a day = **120** mg in 24 hours. (don't miss out **-twice a day-**)!

$$120/2 = 60$$

So, he would be given **60 mg subcutaneous morphine**.

Remember: in palliative care patients, subcutaneous route is preferred.

Side Important Note:

For morphine sulphate capsules prescription to be given by a pharmacist, the doctor must write **the quantity of morphine in words and figures** (as it is a controlled; schedule 2 medication).

Key 70	<p>Terminal Respiratory Secretions (= Death Rattles/ Noisy Breathing)</p> <ul style="list-style-type: none"> • In palliative care patients with excessive respiratory secretions that causes discomfort and rhonchi → Glycopyrronium or Hyoscine (typically given subcutaneously). ✓ Glycopyrronium and hyoscine are anticholinergic medications, typically given subcutaneously. They reduce the excessive respiratory secretions by blocking the action of acetylcholine and therefore reduce the discomfort and risk of aspiration. ✓ Rhonchi are low-pitched cutaneous rattling respiratory sounds that are often associated with airway obstruction or the presence of secretions/ mucus in the larger airways.
Key 71	<p>Constipation in Palliative Care Patients</p> <p>■ For most cases of chronic constipation in palliative patients</p> <p>→ Macrogol (<u>osmotic</u> laxatives). (each sachet is dissolved in half a glass of water).</p> <p>■ For opioid-induced constipation</p> <ul style="list-style-type: none"> • → Senna (could be given tablets or syrup based on the ability to swallow). • Another option → Bisacodyl (per-rectal suppository).

✓ Both senna and bisacodyl are (stimulant laxatives).

✓ Senna is preferred in those who can swallow (either syrup or tablets) because it is easier to use regularly.

✓ Bisacodyl suppository has a faster onset of action but because it is a suppository, it is less preferred.

✓ Avoid senna and bisacodyl (stimulant laxatives) in bowel obstruction.

Example:

A frail elderly woman with metastatic lung cancer is under palliative care and taking oral opioids consistently to manage her pain. She developed constipation with infrequent passage of soft stool. She can swallow liquids but not tablets. There are no signs of bowel obstruction, but there is mild abdominal discomfort. What is the most appropriate medication to manage her constipation?

→ **Senna syrup** (ie: **Stimulant Laxatives**).

✓ Those who are taking strong opioids should be prescribed regular laxatives.

✓ Although senna is generally used for short-term, in palliative patients, senna can be used regularly.

✓ For opioid-induced constipation → Senna or Bisacodyl. Since the patient can drink liquids and needs regular laxatives → Senna “syrup” is preferred.

Key
72

Management of **Opioid**-Induced Constipation in Palliative Care

• **Constipation** caused by opioids (eg, oxycodone) in a palliative patient

→ **Senna (stimulant laxative)**.

In palliative care, managing constipation caused by opioid use, such as oxycodone, is crucial. The preferred approach involves using stimulant laxatives like senna to enhance bowel motility.

Other measures, including adequate hydration and stool softeners, can support effective bowel management.

Key
73

Managing Fluctuating Pain in Renal Impairment (Summarised)

- **Subcutaneous Alfentanil: ✓**

- Ideal for fluctuating pain due to rapid onset and short duration.
- Safer for renal impairment as it is metabolised in the liver.

- **Alfentanil Patch:**

- No patch form available for Alfentanil; that one is Fentanyl.
- Patches generally unsuitable for fluctuating pain due to steady release.

- **Fentanyl Patch:**

- Suitable for stable, chronic pain.
- Not ideal for fluctuating pain due to continuous release.

In short: The best choice for fluctuating pain in a patient with renal impairment is → **Alfentanil Subcutaneous** (not patch, and not fentanyl).

Key
74**Palliative Medications and Their Indications****Morphine sulphate:**

- Indicated for pain and breathlessness relief.

Haloperidol:

- Used as an antiemetic and for treating restlessness and confusion.
- Preferred for nausea due to opioid use or metabolic causes.

Levomepromazine:

- Broad spectrum antiemetic, pain relief, and for restlessness and confusion.
- Suitable for refractory nausea when other antiemetics fail.
- Preferred for vomiting in patients with Parkinson's disease due to its low risk of exacerbating symptoms.

Cyclizine:

- Antiemetic especially useful for intracranial causes of nausea and vomiting.
- Effective for motion sickness and raised intracranial pressure.

Octreotide:

- Used for nausea and vomiting in patients with bowel obstruction.
- Beneficial in managing symptoms of gastrointestinal obstruction.

Metoclopramide:

- Indicated for nausea and vomiting in patients with delayed gastric emptying.
- Enhances gastric motility, useful in gastroparesis.

Domperidone:

- Similar to metoclopramide, used for nausea and vomiting with delayed gastric emptying.
- Less likely to cause central nervous system side effects.

Ondansetron:

- Effective for nausea and vomiting associated with chemotherapy or radiotherapy.
- Preferred for severe, refractory nausea due to cancer treatment.

Midazolam:

- Used for agitation and restlessness, especially in distressing catastrophic bleeds.
- Provides sedation and anxiolysis.

Lorazepam:

- Indicated for agitation and restlessness.
- Useful for anxiety and terminal agitation.

Glycopyrronium:

- Manages excessive respiratory secretions at end of life (e.g., death rattles, noisy breathing).
- Preferred for patients where anticholinergic side effects need to be minimized.

Hyoscine butylbromide:

- Used for excessive respiratory secretions at end of life, bowel obstruction, and intestinal colic.
- Reduces both GI and bronchial secretions.

Hyoscine hydrobromide:

- Similar to hyoscine butylbromide for managing respiratory secretions at end of life.

Dexamethasone:

- Used for vomiting or headaches with raised intracranial pressure and as an appetite stimulant.
- Beneficial for reducing inflammation and cerebral edema.

Antiemetic Comparison in Palliative Care:

- **Haloperidol**: Preferred for nausea due to opioid use or metabolic causes. Contraindicated in Parkinson's disease.
- **Levomepromazine**: Suitable for refractory nausea when other antiemetics fail. Preferred for vomiting in patients with Parkinson's disease due to its low risk of exacerbating symptoms.
- **Cyclizine**: Effective for motion sickness and nausea from raised intracranial pressure.
- **Octreotide**: Best for managing nausea and vomiting in bowel obstruction.
- **Metoclopramide**: Ideal for nausea with delayed gastric emptying or gastroparesis.
- **Domperidone**: Similar to metoclopramide, with fewer central nervous system side effects.
- **Ondansetron**: Preferred for severe, refractory nausea due to chemotherapy or radiotherapy.

Key
75**Revision (Important Scenarios) for Palliative Care Chapter****(1)**

A 68-year-old man with advanced oesophageal cancer is receiving palliative care. He has developed progressive shortness of breath over the last few days. A chest X-ray shows a large left-sided pleural effusion. Despite being on regular oral morphine, he reports little relief from his breathlessness and appears anxious. He is in the terminal phase of his illness with a life expectancy of only a few weeks. What is the most appropriate next step in his management?

- A) Subcutaneous glycopyrronium.
- B) Increase the dose of oral morphine.
- C) Pleural aspiration.
- D) Switch to oral oxycodone.
- E) Subcutaneous midazolam.

Answer:

In this scenario, the patient's breathlessness is primarily caused by the large pleural effusion. While oral morphine is helpful for relieving general dyspnoea, it

does not address the mechanical issue of the pleural effusion, which is contributing to his respiratory distress.

The most appropriate next step is **pleural aspiration (Option C)**, as it directly addresses the underlying cause of his breathlessness by draining the fluid from the pleural space. This procedure can provide rapid and significant relief from symptoms, improving the patient's quality of life during the terminal phase of his illness.

- **Increasing the dose of oral morphine** (Option B) may help with general discomfort or pain but would not specifically address the pleural effusion causing the breathlessness.
- **Subcutaneous midazolam** (Option E) could be used for anxiety and agitation, but it is not the primary treatment for breathlessness caused by an effusion.
- **Subcutaneous glycopyrronium** (Option A) is used for managing secretions but would not relieve the mechanical cause of breathlessness due to the pleural effusion.
- **Switching to oral oxycodone** (Option D) would not offer a substantial benefit over oral morphine in this case.

In short:

- **Pleural aspiration** provides immediate relief by removing the fluid causing the respiratory distress.
 - It targets the root cause of the breathlessness (the pleural effusion) and significantly improves the patient's quality of life.
 - **Oral morphine** may reduce general discomfort but does not resolve the mechanical issue of fluid in the pleural space. Therefore, aspiration is the best option in such cases where weeks of life remain.
-

(2)

A 65-year-old woman with a history of breast cancer, currently receiving palliative care, presents with confusion, lethargy, and worsening fatigue. She has not been eating well for several days. On examination, she is tachycardic with a heart rate of 110 beats per minute, appears dehydrated, and is mildly confused.

Blood results reveal the following:

Calcium: 3.4 mmol/L (2.1-2.6)

Urea: 10 mmol/L (2.5-7)

Creatinine: 130 μ mol/L (60-120)

She has been given intravenous fluids for rehydration, but her symptoms persist, and her calcium level remains elevated. Her family is concerned about her comfort and agitation. What is the next best step in her management?

- A) Subcutaneous haloperidol.
- B) Oral paracetamol.
- C) IV pamidronate.
- D) IV prednisolone.
- E) Oral calcium supplements.

Answer:

In this case, the patient is presenting with **hypercalcaemia**, likely related to her history of malignancy (breast cancer). Hypercalcaemia is common in palliative care, particularly in malignancies, and can cause symptoms like confusion, fatigue, and dehydration, as seen in this patient.

IV pamidronate (Option C) is the correct next step because it is a bisphosphonate that inhibits bone resorption, lowering calcium levels. Pamidronate is commonly used in treating **hypercalcaemia of malignancy**,

including in palliative care settings. While intravenous fluids are the first line of treatment for hypercalcaemia, they may not be sufficient to control calcium levels, and further measures like IV pamidronate are necessary to bring the calcium down.

Haloperidol (Option A) would be appropriate for managing agitation in a patient who is actively dying, but in this case, the patient is not in the final stage of life. Haloperidol does not treat the underlying cause of hypercalcaemia.

Oral calcium supplements (Option E) would exacerbate hypercalcaemia and are therefore contraindicated in this situation.

Oral paracetamol (Option B) would provide symptomatic relief for pain or discomfort but does not address the elevated calcium.

IV prednisolone (Option D) might have some role in certain hypercalcaemic conditions, but IV pamidronate remains the first-line treatment in malignancy-related hypercalcaemia.

In short:

- The patient is not actively dying, which would otherwise necessitate focusing on symptom control such as agitation.

- **IV pamidronate** (IV bisphosphonate) is effective in lowering calcium levels but takes time (up to 48-72 hours), and it is appropriate in this case as the patient's condition is not immediately terminal.
- Subcutaneous haloperidol is useful for managing **agitation** in patients in the active dying phase but not for this patient, who requires treatment for the underlying **hypercalcaemia**.

(3)

A 68-year-old man with a history of chronic obstructive pulmonary disease (COPD) presents to the hospital with a three-day history of fever, worsening breathlessness, and productive cough. He has also had reduced oral intake. On examination, his oxygen saturation is 89% on room air, respiratory rate is 30 breaths per minute, and blood pressure is 86/60 mmHg. There are crackles heard on auscultation, and a chest X-ray confirms consolidation suggestive of pneumonia.

Investigations show the following:

Haemoglobin: 140 g/L (130-180)

White cell count: $12.0 \times 10^9/\text{L}$ (4.0-11.0)

Neutrophils: $8.0 \times 10^9/\text{L}$ (2.5-7.5)

Platelets: $310 \times 10^9/\text{L}$ (150-400)

Creatinine: 350 $\mu\text{mol/L}$ (70-150)

eGFR: 28 mL/min (>90)

CRP: 340 mg/L (<10)

Despite receiving antibiotics and supportive care, his condition worsens, and he passes away the following day. What should be listed in **Part 1a** of his death certificate?

- A) Acute kidney injury.
- B) Pneumonia.
- C) Sepsis.
- D) Chronic obstructive pulmonary disease.
- E) Respiratory failure.

Answer:

In this scenario, the **primary cause of death (1a)** is → **pneumonia**, which directly led to the patient's deterioration and death. Pneumonia was the precipitating event that caused the patient's worsening symptoms and ultimately led to his demise.

Pneumonia should therefore be listed in **Part 1a** of the death certificate, as it was the immediate and direct cause of death.

- **Acute kidney injury (AKI)** is likely a consequence of the pneumonia but not the primary cause, so it could be listed in **Part 1b** as a result of the pneumonia.
- **Sepsis** (if present) could be listed in **Part 1c**, as it may have contributed to the patient's deterioration by leading to AKI and further worsening of his condition.
- **Chronic obstructive pulmonary disease (COPD)** would be placed in **Part 2**, as it is a chronic underlying condition that made the patient more susceptible to pneumonia and its complications but was not the direct cause of death.

Here's how the death certificate should be filled:

1a. Pneumonia.

1b. Acute kidney injury.

1c. Sepsis (if applicable).

Part 2. Chronic obstructive pulmonary disease.

- **Pneumonia** is listed as the **direct cause of death** in **Part 1a**, as it was the immediate event that led to the patient's death.
- **Acute kidney injury** could be listed in **Part 1b**, as it was a consequence of the pneumonia.
- **Sepsis** (if relevant) could be listed in **Part 1c** as the underlying cause of the acute kidney injury.
- **COPD** is placed in **Part 2**, as it contributed to the patient's vulnerability but was not part of the direct chain of events leading to death.

(4)

A 67-year-old man with a history of prostate cancer, currently receiving palliative care, presents with worsening right leg pain, difficulty walking, and occasional swelling around the thigh. The pain has been gradually increasing over the last few weeks and is now severe, particularly in the femur. On

examination, there is tenderness over the right femur, and he is unable to bear weight on the affected leg. Imaging confirms metastasis to the right femur.

Blood tests show:

Calcium: 2.7 mmol/L (2.1-2.6)

Urea: 8 mmol/L (2.5-7)

Creatinine: 120 μ mol/L (60-120)

He has been receiving pain relief, but his symptoms persist, and he is in significant discomfort. What is the next best step in his management?

- A) Oral paracetamol.
- B) Subcutaneous haloperidol.
- C) IV bisphosphonates.
- D) Radiotherapy to the affected bone.
- E) Oral calcium supplements.

Answer:

In this scenario, the patient has **bone metastasis** causing severe pain and functional impairment. The metastasis is specifically affecting the **femur**, leading to symptoms such as pain and difficulty bearing weight.

The most appropriate next step is **radiotherapy to the affected bone (Option D)**, which is commonly used in cases of bone metastases to reduce pain, prevent fractures, and improve mobility. Radiotherapy is effective in alleviating symptoms and can help stabilize the bone in cases where metastasis is causing significant structural weakness.

- **Oral paracetamol** (Option A) may provide mild pain relief but would not be sufficient for managing pain caused by bone metastasis.
- **Subcutaneous haloperidol** (Option B) is used for managing agitation or delirium, but it is not appropriate for treating pain caused by bone metastasis.
- **IV bisphosphonates** (Option C) can be helpful for managing hypercalcaemia of malignancy or to slow bone resorption, but in this case, radiotherapy would be more effective for acute pain relief and stabilisation of the affected bone.
- **Oral calcium supplements** (Option E) would not be beneficial in this scenario and could worsen hypercalcaemia if present.

Thus, **radiotherapy to the affected bone** is the most appropriate management for symptomatic relief in this case of metastatic bone disease.

Remember:

Management of Bone Pain due to Bone Metastasis:

1. **Radiotherapy** – 1st line for localized bone pain caused by metastasis.
2. If **pain persists** or radiotherapy is not fully effective, use the following both:
 - **Bisphosphonates** (e.g., **IV pamidronate** or **zoledronic acid**) or **Denosumab** (an alternative to bisphosphonates) are used to manage bone metastasis pain and prevent skeletal-related events.
 - **NSAIDs** (e.g., **naproxen**) can be added for their anti-inflammatory and pain-relieving properties.
3. If there is **still pain**: **Opioids** (e.g., morphine, oxycodone, or alfentanil) are added for stronger pain control.

Additional Notes (for reading):

- *In some cases, **corticosteroids** (e.g., dexamethasone) can be used to reduce inflammation and swelling around bone metastases.*

- **Nerve blocks or neuropathic pain medications** (e.g., gabapentin) might also be considered if there is nerve involvement.

This approach provides a stepwise escalation of pain management, starting from radiotherapy and advancing through bisphosphonates/NSAIDs, opioids, and other modalities if needed.

(5)

A 75-year-old man with metastatic colon cancer presents to the hospital with worsening nausea, vomiting, and abdominal cramping. He was recently treated for a partial bowel obstruction and has had episodic vomiting since then. He describes the cramping as sharp and intermittent. On examination, his abdomen is mildly distended with active bowel sounds, and he continues to pass stool. There is no guarding or rebound tenderness. He has been on regular oral opioids for pain management. Which of the following is the most appropriate next step in managing his nausea?

- A) Hyoscine butylbromide.
- B) Prednisolone.

C) Cyclizine.

D) Diazepam.

E) Oral laxatives.

Answer:

In this scenario, the patient presents with nausea and vomiting likely due to his recent history of partial bowel obstruction, a common complication in palliative care for patients with advanced cancers. Managing these symptoms effectively is crucial for his comfort.

The best treatment for **nausea** in this case is **Cyclizine** (Option C). Cyclizine is an antiemetic that is commonly used to control nausea and vomiting associated with bowel obstruction. It is particularly effective when vomiting is the predominant symptom, as is the case here.

- **Hyoscine butylbromide** (Option A) would be useful if the predominant symptom were colicky abdominal pain due to bowel spasms. While the patient does experience some cramping, it is not the main focus of this scenario, which centers around managing nausea.

- **Prednisolone** (Option B) and **diazepam** (Option D) are not appropriate for treating nausea in this context.
- **Oral laxatives** (Option E) could worsen the bowel obstruction and are contraindicated in this setting.

In short:

- **Cyclizine** is effective for managing nausea and vomiting in cases of bowel obstruction. It helps improve the patient's comfort by addressing the primary symptom.
- **Hyoscine butylbromide** is appropriate when the main issue is **colicky pain**, as it acts as an antispasmodic to relieve bowel spasm, but cyclizine is preferred when nausea is the dominant concern.

(6)

Glycopyrronium is an **antimuscarinic** (also known as an anticholinergic) medication. It works by blocking the action of acetylcholine on muscarinic receptors, which reduces secretions in the respiratory tract and other areas. It is commonly used **subcutaneously** in palliative care to manage excessive

secretions or distressing gurgling sounds, such as in patients with terminal respiratory conditions, and in other settings like anaesthesia and chronic obstructive pulmonary disease (COPD) to reduce airway secretions or manage chronic drooling.

Another valid option → **SC Hyoscine Butylbromide**.